

ATGCCAAGCGCGCACTGGGGGGCCCTCTCCGTGGTCTGATCTGCTTTGGGGCCATCCGGAGTGGCGCTGGCCCTGCCCGCATCCTTGTCCT  
GCTACGTCCTCCAGCGAGGTCCACTGCACGTTCCGATCCCTGGCTTCCGTGCCCGCTGGCATTGCTAGACACGTCGAAAGAATCAATTTGGGGTTTAA  
TAGCATACAGGCCCTGTGAGAACTCTATTGACGAGTACCAAGTTGGAGTACTTATGATTCACGGCAATGAGATCCCAAGCATCCCGATGGA  
GCTTTAAGAGACCTCAGCTCTCTTCAGGTTTCAAGTTCAGCTACAACAAGCTGAGAGTGATCAGGACAGACCTCCAGGGTCTCTCTAACTTAA  
TGAGGCTGCACATTGACCAACAAGATCGAGTTTATCCACCCTCAAGCTTCAACGGCTTAACGTCTCTGAGGCTACTCCATTGGAAGGAAATCT  
CCTCCACAGCTGCACCCAGCACCTTCTCCAGGTTCAATTTTGGATTATTTCAGACTCTCCACCATAAGGCACCTCTACTTAGCAGAGAATATG  
GTTAGAATCTTCTCTGCCAGCATGCTTCGGAACATGCCGCTTCTGGAGAACTTTACTTGCAGGGAAATCCGTGACCTGCGATTGTGAGATGAGAT  
GGTTTTTGGAAATGGGATGCAAAATCCAGAGGAATCTGAAGTGTAAAAGGACAAAGCTTATGAAGCGGTGAGTTGTGTGCAATGTCTTCAGTCC  
AAGAAGTTGTACAAACATGAGATACCAAGCTGAAGGACATGACTTGTCTGAAGCCTTCAATAGAGTCCCCTCTGAGACAGAACAGGAGCAGGAGT  
ATTGAGGAGGAGCAAGAACAGGAGGATGGTGGCAGCCAGCTCATCTCTGGAGAAATTCGAAGTCCGCCAGTGGAGCATCTTTGAATATGACCG  
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GTGAAGCTACACAGAGGCTCATGCTCAGCAAGAGCCAGAGTCAAGTTCAGCTGCAAGCTTCAAGCTTCTGAGAGTCCATCTTTACTACACAGGTG  
TGAGAGCCAGATTCTTGCAAGACAGAAATGGGTCTGACGCCATCCATAGATATCCAGCTGAACCGACGTGAGTACGGCCAAAGAGGTGCTACT  
TTCTACTACACCCAGTATTCTCAAAATATCCACCAAGATACAAGCAGGCTCGGGGCAAGAGTGGGTATGATTGAGCTAGTGAGGCTGTG  
CAAGAGCTACAGCTTCTCTGGAAGGGGTCATGCCAGTTGAGCTGCAAGCTTCTGAGAGTCCATCTTCTGGGTGCTTCCAGATG  
GCTCCATCTGAAAGCGCCCATGGATGACCCAGACAGCAAGTTCTCCATTCTCAGCAGTGGCTGGCTGAGGATCAAGTCCATGGAGCCATCTGACCTC  
AGGCTTGTACAGTGCATTGCTCAAGTGAAGGATGAAATGGACCGCATGGTATATAGGGTACTTGTGCACTCTCCCTCCACTCAGCCAGCCGAGAAA  
GACAGTGCACAAATTTGGCAAGAACCCAGGGGAGTCCGTGACATTGCTTGAATGCTTTAGCAATACCCGAAGCCACCTTAGCTGGATTCTTCCAA  
ACAGAAGGATAATTAATGATTTGGCTAACACATCACATGTATACATGTTGCCAAATGGAATCTTTCCATCCAAAGGTGCAAGTGAATGGTGG  
TTACTACAGATGTGTGGCTGTCAACAGCAAGGGGAGACCAATTTACGGTGGGAATCAGAGTACCAAGAAAGGGTCTGGCTTGCATCCAAAGA  
GGCAGACGCCAGGTGCAAGGCTCTTTCCAGAGTCAAGAGACATCGTGAGGATGAAGGGGGCTCGGGCATGGGAGATGAAGAGAACACTTCAA  
GGAGCTTCTGCATCCAAAGGACCAAGAGGTGTTCTCAAAACAAAGGATGATGCCATCAATGGAGACAAGAAAGCCAAAGGAGAGAAAGCT  
GAACTCTGGAAGCATTGGAAGAAAGAACAGAGACCAATGTTGCAAGAGTGCAGAGTGTGTAATCTAGACGAAGGATAAATATGCAACAA  
CAGATTAATCCGGAGCGCTGGGCTGATATTTAGCCAAAGTCCGTGGGAAATCTCCCTAAGGGCACAGAAGTACCCCGTGTGATTAACCA  
CTCTCCATCTTGGAGCTAGAAAGTCAACACCTTTCTCTGCTTCTCCCTCCCTCAGCATCTCTGTGTCAGACAGTAAACAGTCTGGAAGATC  
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AGGGACAGTCCCTTACACTTATATCTGAGCCTTATGAACCATCTCTCTGCTGCAACATAGACACAGTCTATGAAAGCCCACTTGAAGA  
GACGGCAACAGAGGGTGTGCTGACAGCATGTTGGATCGTCACAGAGCCACATCCAGTGAATGAGCTCCATTTGGATGCTGTCTCTGGCT  
GAGTCTGAGCCATGCAATCTTTGACCCAGATTTGGAGACTTAAGTCAACACAGATGAGGATAAGATGAAGAAAGACACCTTGCACACCTTACTC  
CAACCCCATCTGGAGCTAGAAAGTCAACACCTTTCTCTGCTTCTCCCTCCCTCAGCATCTCTGTGTCAGACAGTAAACAGTCTGGAAGATC  
AGGACTGACAGACAACATCCACCTTGTGAAAGAGTGTATAGCACTCAAGACCTTACTGATTAAGAAAGGTATGAAGAGATGTCTCAGACACTA  
CAGGGAGGAATATGCTAGAGGGAGACCCACACACTCCAGAAGTCTGAGAGTGAAGGGCAAGAGAGCAATCCATCACTTTGCTGACTCCACAC  
TGGGTATAATGAGCAGTATGCTCCAGTTAAGAGCCTGCGGAACCAAGTGGTACCTCTAGACAAAGACACCAAGTAAACAACACAC  
AAGGCAAAAAGTTGCTCCGTCATCCACCATGAGCACTACCTTCTCGAAGGAGACCAACGGGAGAGGATTAAGCCCAACAAATTCGCGCAC  
CGGCACAGCAAAACCCACCACTTTTGGCCCATCAGAGACTTTTCTACTCAACCACTCAAGCACCAGATTAAGATTTCAAGTCAAGTGG  
AGAGTCTCTGGTCTCTCAGCTTGGTGGATAACACAGTTAATACCCCAACAGTGGAAATGGAGAAGATGCAAGAACCCATCCAAAGGAAC  
ACAGGAGAAACAGCGGAGAGGCAACAAACATGATATACCTTCTACAGTGAAGTCAAGAGCGTCCGGATCCAGCCCAAGCAATTTCTCCA  
GAAATTAACATAGAAACATTTGTTACTCCAGTTCAGAACTATATCTTTGCTAGAACTGTTTCTCTGAAACTGAGGGCCCTTATGATTCCTTAG  
ATTACATGACAACCCAGAAAAATATATTCATCTTACCCTAAAGTCAAGAGACACTTCCAGTCAATATAAACCCATCAGATGGAAGAAAT  
TAAGGATGATTTGCCCAAAATGTTGACAAACATAAAAGTGACATTTTAGTCACTGGTGAATCAATTAATGCAATCAACATCTCTGCTTGT  
GTCTCCACTATGGGAGAAATTAAGGAAGATCTCTCTCTGTAGGCTTTCCAGGAATCCAACCTGGAATCCCTCAAGGACGGCCAGCTTGGAGGC  
TACAGACAGACATCTGTTTACACTTCTGGGGAATCTTACAGACCTCCCTTCTTAAAGAGCTTGAAGATGTTGATTCACTTCCGAGTTT  
GTCTCTTTGACAGTCTCCACACCTTTCCAGGAAGAGCTGTTTCTTCCCAACTCTCTCAAGCATAAAGTGGAGTTGCTTCAAGTACAGCA  
GAAACCAACCCCTTGTCAAGATCATCTTGAACCACTGTGGCTATTCTCTTTCTGAAACTAGACCACAGAAATCACACCCCTACTGCTGCCCGGA  
TGAAGGAGCAGCATCTCTGCTCCCATCCCAATTTCTCATGTCTTTGGGACAAACACCACTAAGCCAGCACTTCCAGTCCAAAGAAATATCTCA  
AGCATCTAGAGATTCCAAGGAAATGTTTCTTGAATATGTTGGGAATCCAGAAACAGCAACCCCAATGAAGGAACACAGCATATG  
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GTCTACACAGTGGCCAGATAGCCACGCGAGGATGGAAGAGTTCATGCTTCTCATCAACTAACCAGAGTCCCTGCCAAACCCATCTTACCAACAGC  
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GCATTCTAGTAAGTTTACTGACCGAAGAACTGACCAATCAATGGTTACTCCAAGTGTGGAATTAACAAATCCTTGAAGCAAGAAACCCAGT  
TGGAAAGCCTCCAGTCCAAAGATCTCTCATTATTTCAATGGAAGACTCCCTTTCTTACCAACAGACTCTTTCTTTCCAGCTTGGGAGTCAAC  
CGGAGACCCAGATACCCACTTCTCTGCCCCAGTAATGAGAGAGAGAAAGTTATTCAGGTTCTTACAACAGGATACATTTCCATAGCACCTTCC  
ATCTGGACTTTGGCCCTCCGGCAGCTCCGTTGTTGCACACTCCGACAGACCGGATCACTTCACTAATTTACAGAAATATCCCTATGCTCTCTT  
CAGCCAGAGTTCTATCTCTTTATAACATCTTCTGTCCAGTCTCAGGAAGCTTCCACAGAGCAGCTCAAGTCTTTGAGGAGGACCTCTGCA  
TCCAAATCTGGTCTCTTGGGGAAGGCCCAATCTCACCAGTCCCAACAGACTGTGTCCTGTCAGGCTGAGACAGACTGTGTTCCCTGTG  
AGGCAACAGGAAACCAAGCCTTCTGTTACTTGGACAAAGGTTTCCACAGGAGCTTATGACTCCGAATACCAGGATACAACGGTTTGAAGTTCT  
CAAGAACGGTACCTTAGTGATACGGAAGGTTCAAGTACAAGATCAGAGGAGTATGTCACCGCCAGCAACTGCAAGGCTGGAAGAGGATGGT  
GTCTTGGCTTCTGGTCAAGCTGACCAACCTCAATCTAGCTTCCACTACAGGAGTCACTGTCTACCTGGAGACCACTTGAATGGAGTGT  
TGGCCAAAGGAGCCAGCCCTTCTGATTTCTCTGAGTCTTCTGACAGGAGGTTGGCAAACTGTGTCTCCCGTGGAGAGCCGATCACTGCA  
CGAAACCGGACCTTTCCATCAAGGAGGCGTCTTCTCAGACAGAGGCGTCTATAAGTGGTGGCCAGCAATGACGCGGGGGGACAGCCTGGCC  
ATCCGCTGACAGTGGCGGCACTGCCCCCGTTATCCACAGGAGAGCTGGAGAACATCTCGCTGCCCGCGGGCTCAGCATTCATCTACTGCA  
CTGCCAAGGCTGCCCGCTGCCAGCTGGGTCTCGGGAGCGGTACCAAGTCCGCCCTCGCAGTTCTTCCACGGGAATGTTTGTGTTT  
CCCCAACGGGACGCTTACATCCGCAACCTCGCGCCCAAGGACAGCGGGCGCTATGAGTGGTGGCGGCCAACCTGTTAGGCTCCGCGCGCAGGACG  
GTGACGCTGAACGTGACGCTGCAGCAGCAACCGCGGCATCACGGGCACTCCCGCGGAGGACGGAGTCAAGTACGGAGAACCTCAAGCTGG

FIG. 1

ACTGCAGCGCCTCGGGGACCCCTGGCCGCGCATCTCTGGAGGCTGCCGTCCAAGAGGATGATCGACGCGCTCTTCAGTTTTGATAGCAGAAATCAA  
GGTGTGTTGCCAATGGGACCCCTGGTGGTGAATCAGTGACGGACAAAGATGCCGGAGATTACCTGTGCGTAGCTCGAAATAGGTTGGTGAAGTACTAC  
GTGGTGCTCAAAGTGGATGTGGTGAAGAACCGGCCAAGATTGAACACAAGGAGGAGAACGCCACAAAGTCTTCTACGGGGGTGACCTGAAAGTGG  
ACTGTGTGGCCACCGGGCTTCCCAATCCCGAGATCTCTGGAGCCTCCAGACGGGAGTCTGGTGAATCCTTTCATGCAGTCCGGATGACAGCGGTGG  
ACGCACCAAGCGCTATGTCGTCTTCAACAATGGGACACTTACTTTAACGAAGTGGGGATGAGGAGGAAGGAGACTACACCTGCTTGTGTAAGT  
CAGGTCGGGAAGGACGAGATGAGAGTCAGAGTCAAGGTGGTGACAGCGCCGCCACCATCCGGAACAAGACTTACTTGGCGGTTCCAGGTGCCCTATG  
GAGACGTGGTCACTGTAGCCTGTGAGGCCAAAGGAGAACCCATGCCCAAGGTGACTTGGTGTGCCCAACCAACAGGTGATCCCACTCTCTGA  
GAAGTATCAGATATACCAAGATGGCACTCTCTTATTAGAAAGCCAGCGTTCTGACAGCGGCAACTACACCTGCTGGTTCAGGAACAGCGCGGGA  
GAGGATAGGAAGACCGGTGTGGATTACGTCAACGTCCAGCCACCCCAAGATCAACGGTAACCCCAACCCCATCACCACCGTGGGGAGATGACAGCGG  
GGGCGAGTCGGAAGTGAATGACTGCAAGCTGAAGGCATCCCAACCCGAGGGTGTATGGGCTTTTCCCGAGGGTGTGGTCTGCCAGCTCCATA  
CTATGGAACCGGATCACTGTCCATGGCAACGGTTCCTTGGACATCAGAGTTTGGAGAGAGCGACTCCGTCCAGCTGGTATGATGGCAGCGAAC  
GAGGAGGGGAGCGGAGGTGTGATCGTGCAGCTCACTGTCTGGAGCCATGGAGAAACCCATCTTCCACGACCCGATCAGCGAGAGATCAGCGCCA  
TGGCGGGCCACACCATCAGCCTCAACTGCTCTGCCCGGGGACCCCGACACCCAGCCTGGTGTGGGTCTTCCCAATGGCACCAGTCTGCAGAGTGG  
ACAGCAGCTGCAGCGCTTACCCACAAGGCTGACGGCATGTACACATTAGCGGTCTCTCTCGGTGGAGCTGGGGCTACCGCTGGTGGCGCCG  
AATGCCGCTGGCCACACGAGGCTGGTCTCCCTGAAGTGGGATGAAGCCAGAGCAACCAAGCAGTATCATAACTGGTCAGCATCATCAATG  
GTGAGACCTGAAAGTCCCTGCACCCCTCCCGGGCTGGGCGAGGAGCTTTCTCTGGACGCTCCCAATGGCATGCATCTGGAGGGGCCCAAC  
CCTGGGACCGGTTTCTTCTGGACAATGGCACCCTCAGGTTCTGTGAGGCTCGGTGTGACAGGGGTA CTTATGTATGCAGGATGGAGACGGAG  
TACGGCCCTTCGGTCAACAGCATCCCGTGAATGTGATCGCCTATCTCTCCCGGATCACCAGCGAGCCACCOCGGTCACTACACCCGGCCCGGA  
ACACCGTGAAGTGAAGTGCATGGCTATGGGATTCCCAAGCTGACATCAGCTGGGAGTTACCGGATAAGTCCGCATCTGAAGGCGAGGGGTTCAGGC  
TCGCTGTATGGAACAGATTTCTTACCCCGAGGATCACTGACCATCCAGCATGCCACACAGAGAGATGCCGCTTCTACAAGTGCATGGCAAAA  
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TCAAAATGAAGCCATAGACATGAACAACCTCACTACCCCTTGAAGACGCATCAGCTAGTTAACTGCTGCTAGTTTACATAGATAGCTTTGTT  
CCAGATTGACAAGTCACTTTTCACTTATTCTCTGTCACTTCAAACTCCAGCTTGGCCAAATAGGATTTAGAACCAGAGTGAATGATATATAT  
ATATATTTTAAATCAGAGTTACATACATACAGTACCATTTTATATGAAAAAGAAAAACATTTCTTCTGGAAGTCACTTTTATATATGTTT  
TGGATACATTACAGCAGACATGGAAATATAATTTTAAAAATTTCTCTCAACCTCTTCAATTCAGTCAACCTGTTATATTACCTTCTCCAGGA  
ACCTCCAGTGGGGAAGGCTGCGATATTAGATTCTTGTATGCAAGTGTGTTGAAAGCTGTGCTCAGAGGAGGTGAGAGGAGGAGGAGGAGAA  
AAGTGCATCATATTTACAGAAATGAATCTAGAGTCTTCCCGAAAAGCCAGAAACTCTCTGAGTATCTGGCTTCCATCTGGCTTAAGGTG  
GCTGCTTCTTCCAGCTCAGTCACTTGTGCTTGTGCTTGAATAATACACGACCTGTTATTCTCATGACTGCTTTACTGTATTTTAAAGTCAATATA  
CTGTACATTTGATAATAAATAATATTCTCCAAAAA

FIG. 1 - CONTINUED

MPKRAHWGALSUVLILLWGHPRVALACPHPCACYVPSEVHCTFRSLASVPAGIARHVERINLGFNSIQALSETSFAGLTKLELLMIHNGNEIPSIPOG  
ALRDLSSLOVFKFSYNKLRTVITGQTLQGLSNLMRLHIDHNKIEFIHQAFNGLTSLRLHLLEGNNLHQLHPSTFSTFTFLDYFRISTIRHLYLAENM  
VRTLPASMLRNMPLEENLYLQGNPWTCDCEMRWFLYEDAKSLKCKADKAYEGGQLCAMCFSPKKLYKHEIHKLKDMTCLKPSIESPLQRNRSRS  
IEEEQEEEDGGSQILILEKFLQPOWSISLNMTEDEHGNMNVNLCIDIKKPMVDVYKIHNLQTDPPDIDINATVALDFECPMPTRENYEKLWKLIAYYSEVP  
VKLHRELMSKDPVRSYQYRQDADEALYTTGVRAQILAEPEWVMQPSIDIQNRRQSTAKKVLLSYTQYSQTIISTKDTROAGRSWVMIEPSGAV  
ORDQTVLEGGPQLSCNVKASESPSIFWVLPDGSILKAPMDPDSKFSILSSGLWRIKSMEPSDSGLYQCIQVDEMDRMVYRVLVQSPSTPOAEK  
DTVTIGKNPGESVTLPCNALAIPEAHLNWLIPNRRIINDLANTSHVYNLNPNGTSLIPKVOVSDSGYRCAVAVNQOAGDHFTVGTITVTKKSGSLPSKR  
GRRPGAKALSRVEDIVEDEGSGMGDEENTSRLLHFKDQEVFLKTKDDAINGDKKAKKGRRLKLVKHSEKEPETNVAEGRVVFESRRRINMANK  
QINPERWADILAKVRGNLPKGTVEVPLIKTSPPSLSLEVTPFPFVAPSPSPSPTVTTSAEESADVPLLGEEHVLTGISSASMGLEHNNHNGVI  
LVEPEVTSTPLEEVVDDLSEKTEEITSTEGDLKGTAAFTLISEPEYSPPTLHTLDTVYEKPTHEETATGWSAADVGSSPEPTSEYEPPFLDAVSLA  
ESEPMPQYFDPDLETQSOPDEDKMKEDTFAHLTPTPTIWNDSSTSLFEDSTIGEPGVPGQSHLQGLTDNIHLVKSSLSQTDLILLIKKHKEMSQTL  
QGGNMLEDGPTHSRSESSEGEQESKISITLPDSTLGIMSSMSPVKKPAETTVGLLDDKDTTITVTTTPROKVAAPSSTHSTHPSRRRPNGRRRLRPNKFRH  
RHKQTPPTTTFAPSETFTSTQTPQAPDIKISSQVESLVTAWVDNTVNTPKOLEMEKNAEPTSKGTPRRKHGKRPNKHRYTPTSTVSSRASGSKPSPSP  
ENKHRNIVTPSSETILLPRTVSLKTEGPDYSLDYMTTRKIYSSYPKVOETLPTVTKPTSDGKEIKDDVATNVDRKHSIDILVTGESITNAIPTSRSL  
VSTMGEFKEESSPVGFPPTPTWNPSTRAQPGRLQTDIPVTTSGENLTDPPLLKELEDVDTSEFLSSLTSTPFFHQEEAGSSTLSSIKVEVASSQA  
ETTLDDQDHLLETTVAILLSETRPNHTPTAARMKEPASSPSTILMSLDGQTTTTPALPSPRISQASRDSKENVFLNVGNPETEATPVNNEGTQHM  
SGPNELSTPSSDRDAFNLSTKLELEKQVFGSRSLPRGPDSDQDGRVHASHQLTRVPAKPIPTATVRLPEMSTQSASRYFVTSQSPPRHTNKPET  
TYPGALPENKQFTTPTLSSTTIPPLHMSKPSIPSKFTDRRTDQFNGYSKVFNNNIPEARNPVGKPPSPRIPHYSGNRLPFTTNKLSFPQLGVT  
RRQIPTSPAPVMRERKVI PGSYNRIHSHSTFHLDFGPAPPLHTPQTGSPSTNLQNI PVSSSTQSSISFITSSVQSSGFSHQSXKFFAGGPPA  
SKFWSLGEKPKQILTKSPQTVSVTAETDTVFCEATGKPKFVTWTKVSTGALMTPNTRIQRFEVLKNGTLVIRKVOVQDRGOYMTASNHLGLDRNV  
VLLSVTVQPOQILASHYQDVTYVLDGTIAMECLAKGTPAQISWIFPDRRVQTVSPVESRITLHENRTLSIKEASFSDRGVYKCVASNAAGADSLA  
IRLHVAALFPVVIHQEKLNI SLPPGLSIHICTAKAALPSPVRVLDGDTQIRPSQFLHGNLFFVFNGLTYIRNLAPKDSGRVYECVAANLVGSARRT  
VOLNVQRAAANARITGTSFRRTDVRYGGTLKLDSCASGDWPWRIWLRLPSKRNIDALFSFDSRIKVFANGTLVVKRSVTDKADGYLCVARNKVGDDY  
VVLKVDVVMKPAKIEHKEENDHKVFYGGDLKVDCAVTLGNPEISWLPDGLSVNSFMQSDSGGRTKRYVVFNNGLTYFNEVGMREEGDYTCFAEN  
QVGKDEMVRVVKVTPATIRNKTYLAVQVPYGDVVTVAACEKAGPEMKQVTWLSNPNVIPSSEKQIYQDGLLIQAKRSRDSGNYTCLVRNSAG  
EDRKTVVIHVNQPPKINGNPNPITTVREIAAGGSRLIDCAEGIPTFRLVWAFPEGVVLPAFYGNRITVHNGSLDRLSRKSDSVQLVCMARN  
EGGEARLIVQLTVLEMEKPIFHDPISEKITAMAGHTISLNCSAAGTPTSLVWVLPNGTDLQSGOQLQRFYHKADGLHISGLSSVDAGAYRCVAR  
NAAGHTERLVSLKVLKPEANKQYHNLVSIINGETLKLPTCPGAGGGRFWSLTPNGHNLGEPQTLGRVSLLDNGTLTVREASVFDGRGTVCRMETE  
YGPSVTSIPVIVIAYPPTITSEPTPIVITRPGNTVKLNCMANGIPKADITWELPKSHLKAGVQARLYGNRFLHPQGLTIQHATQDAGFYKCMK  
NILGSDSKTTYIHFV

FIG. 2

Levels of Adican mRNA in human cartilage by RT-PCR

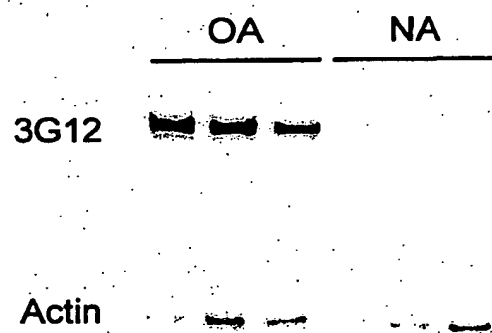


FIG.3

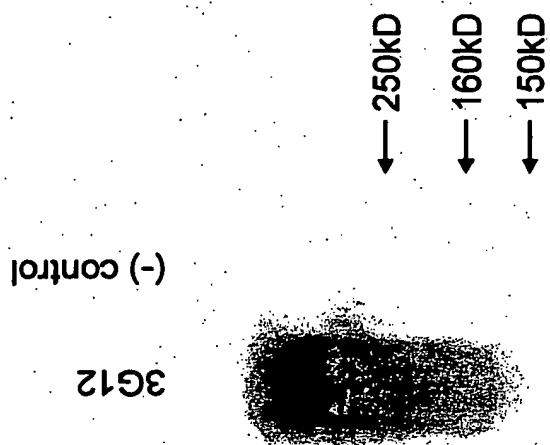


FIG.4

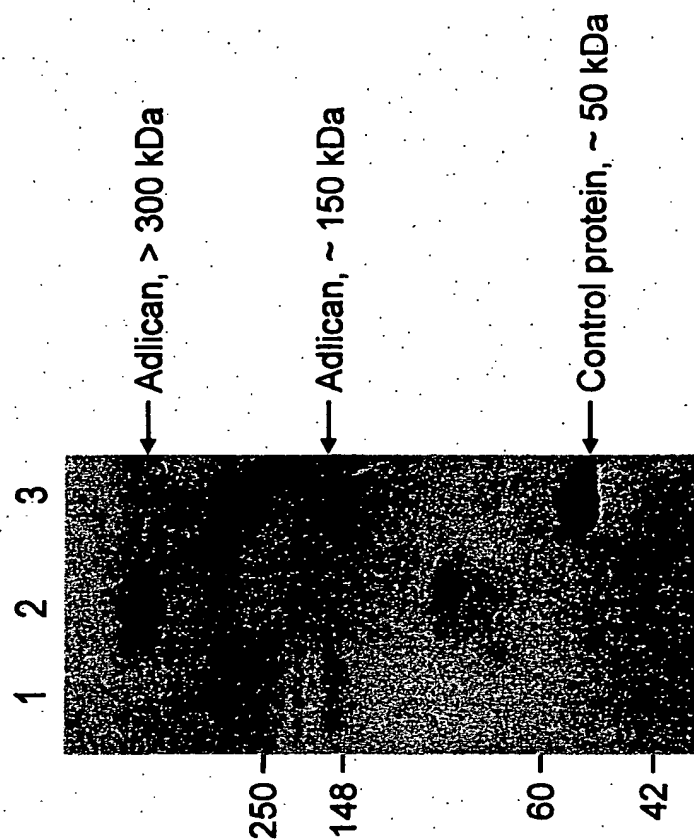
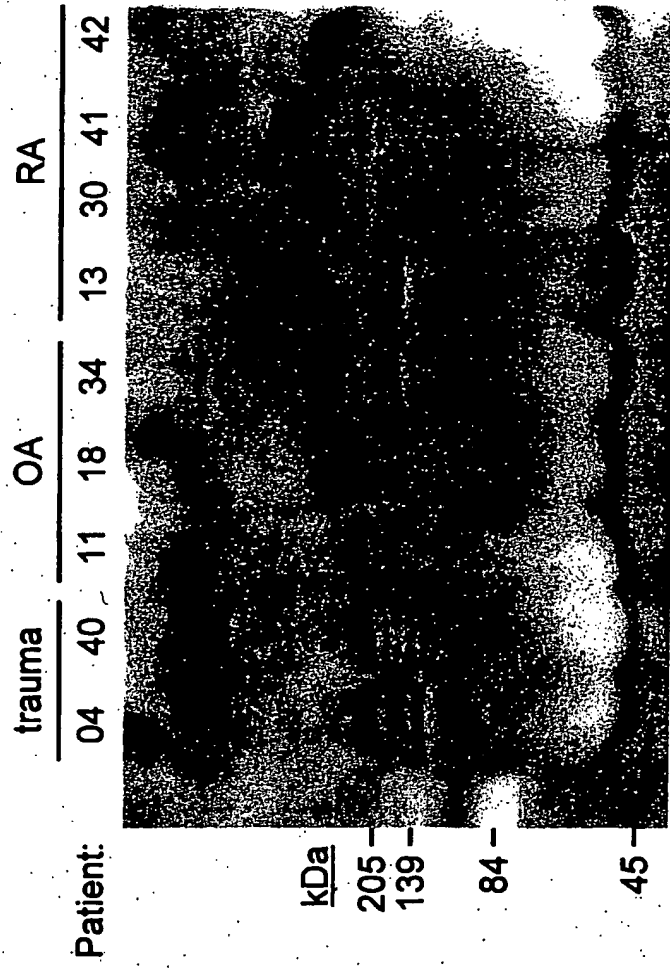


FIG.5



DIAGNOSIS	Western blot positive/total
trauma	1/2
gout	0/3
OA, mild/mod.	2/4
OA, severe	4/4 ←
RA, moderate	2/6
RA, severe	1/2

FIG.6